



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/041,957	01/07/2002	Steven Teig	SPLX.P0044	5414
48947	7590	08/11/2005	EXAMINER	
STATTLER, JOHANSEN, AND ADELI LLP 1875 CENTURY PARK EAST SUITE 1050 CENTURY CITY, CA 90067			TAT, BINH C	
			ART UNIT	PAPER NUMBER
			2825	

DATE MAILED: 08/11/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/041,957

Applicant(s)

TEIG ET AL.

Examiner

Binh C. Tat

Art Unit

2825

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 May 2005.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 27-47 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 27-47 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 07 January 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

1. This office action is in response to application 10/041957 filed on 02/07/02.

Claims 27-47 remain pending in the application.

Response to Arguments

2. Applicant's arguments with respect to claims 27-47 have been considered but are persuasive in view of the new ground's of rejection.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 27-47 are rejected under 35 U.S.C. 102(e) as being anticipated by Teig et al., "U. S. patent 6826737".

4. As to claims 27, 46, and 47 Das et al. a method teach of pre-computing routes for nets, the method comprising: a) prior to performing a routing operation, defining a set of partitioning lines for partitioning (see fig 1, fig 7, and fig 8, fig 12), during the routing operation, a region of an integrated circuit ("IC") layout into a plurality of sub-regions (see fig 1, fig 7, and fig 8, fig 12 col 9 lines 62 to col 11, lines 35); b) for a set of potential sub-regions, identifying a set of at least two routes that traverse the potential set of sub-regions, wherein at least one of the routes has at least one diagonal edge (see col 13 lines 1-16, especially 1-3, 14-16; col 14. lines 26-31); storing

Art Unit: 2825

the identified routes, wherein said stored routes are for use during the routing operation (see col 14 lines 26-40) .

5. As to claim 28 Das et al. teach wherein a plurality of paths exist between the sub-regions defined by the set of partitioning lines, wherein a plurality of the paths are diagonal paths, wherein at least one of the routes traverses some of the diagonal (see col 13 lines 1-16, especially 1-3, 14-16; col 14. lines 26-31 and background).

6. As to claims 29 Das et al. teach wherein identifying the routes comprises identifying the paths between the sub-regions used by each route (see col 13 lines 1-16, especially 1-3, 14-16; col 14. lines 26-40).

7. As to claim 30, Das et al. teach wherein a plurality of the paths are Manhattan paths, wherein at least one of the routes traverses some of the Manhattan paths (see col 13 lines 1-16, especially 1-3, 14-16; col 14. lines 26-40 and summary).

8. As to claim 31-33 Das et al. wherein a plurality of edges exist between the sub-regions defined by the set of partitioning lines, wherein a plurality of the edges between the sub-regions are diagonal edges, wherein at least one of the routes intersects at least one of the diagonal edges (see col 13 lines 1-16, especially 1-3, 14-16; col 14. lines 26-40).

9. As to claim 34-36 Das et al. further comprising: a) for each particular set of potential sub-regions from a group of potential-sub-region sets and wherein the group of sets includes all possible sets of sub-regions including sets with zero or one sub-region, wherein the identified sets of routes for sets of sub-regions with zero or one sub-region are empty, identifying a set of routes that traverse the particular set of potential sub-regions, wherein some of the routes have

Art Unit: 2825

diagonal edges (see col 13 lines 1-16, especially 1-3, 14-16; col 14. lines 26-40 and background and summary); and b) storing the identified routes (see col 13 lines 1-16, especially 1-3, 14-16; col 14. lines 26-40 and summary).

10. As to claim 37 and 42 Das et al. teach for a roister that uses a set of partitioning lines to partition an integrated circuit ("IC") layout region into a plurality of sub-regions, wherein a plurality of routing paths exist between the sub-regions, a method of pre-computing routes for connecting said sub-regions, the method comprising: for each particular combination of two or more sub-regions, identifying at least one route for connecting the particular combination of said sub-regions, said identifying performed before a routing operation (see fig 1, fig 7, and fig 8, fig 12 col 9 lines 62 to col 11, lines 35); identifying the routing paths used by each identified route, wherein some of the identified routing paths are diagonal (see col 13 lines 1-16, especially 1-3, 14-16; col 14. lines 26-31); and storing the identified routing paths for each identified routes in a storage structure wherein said stored routing paths are for use during the routing operation (see col 14 lines 26-40) .

11. As to claim 38 , 41 and 43 Das et al. teach wherein some of the routing paths are horizontal (see col 13 lines 1-16, especially 1-3, 14-16; col 14. lines 26-40).

12. As to claim 39 and 44 Das et al. teach wherein some of the routing paths are Manhattan (see col 2 lines 63 to col 4 lines 41).

13. As to claim 40 and 45 Das et al. teach wherein the Manhattan routing paths are defined with respect to a first grid, and wherein the diagonal routing paths are defined with respect to a second grid (see col 13 lines 1-16, especially 1-3, 14-16; col 14. lines 26-40 and background).

Art Unit: 2825

Conclusion

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Binh C. Tat whose telephone number is (703) 305-4855. The examiner can normally be reached on 7:30 - 4:00 (M-F).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mathew Smith can be reached on (703) 308-1323. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 305-3431 for regular communications and (703) 305-3431 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-1782.

Binh Tat
Art Unit 2825
August 6, 2005

Thuan
THUAN DD
Primary examiner.
08/09/2005